

Horticultural.

SPRAYING WITH THE ARSENITES.

The Agricultural College of Michigan Experiment Station—Bulletin No. 53.

Nine years ago, at the first meeting of this society, I presented a paper upon the use of Paris green as a specific against the codling moth.

In this paper I gave the results of careful and elaborate experiments, which settled two facts which were very important in economic entomology: First, that Paris green was efficient as a preventive of the ravages of the codling larva; and secondly, that such use was entirely safe in respect to poisoning the fruit. To-day, less than a decade from the date of the discovery of this remedy, this method to combat the worst insect pest of the apple grower is generally adopted by the more intelligent orchardists of our country. Its value is now universal and conceded. Easy and cheap methods to apply the insecticide are now known and generally adopted.

For several years myself and others have been experimenting, in hopes to find that this same insecticide was equally efficient to destroy the plum curculio. For six or seven years I have sprayed plum trees once and even twice with no apparent good. Test trees, close beside the trees sprayed, and that were not treated, were as free from attack as the trees that were sprayed, and the trees treated were no more exempt from attack than the others. Thus I was convinced that this insecticide was of no value in this curculio warfare. Several of my horticultural friends, in whose ability to experiment and observe correctly I had great confidence, had tried this remedy with very satisfactory results. In 1888 I studied this matter very closely, and concluded that as the plum is a smooth fruit, with no calyx cup like that of the apple, in which the poison may lodge, and as the curculio lays its egg anywhere on the smooth rind, the poison would be very easily washed off, or even blown off by the wind. I thus concluded that my want of success was very likely due to a want of thoroughness. In 1888 I sprayed certain trees three times, at intervals of eight days, and omitted to treat other trees close along side. The benefit from spraying was very marked.

I also found that carbolic acid—only one pint of crude carbolic acid to fifty pounds of plaster—was quite as efficient to repel the curculio as the arsenites. This was also applied three times. The season was very dry, and there were few or no rains to wash off the insecticides. This year I repeated the experiments both with the London purple and with the carbolic plaster, but with no success. All the trees were severely attacked, and all the plums lost. This year we had almost daily rains, which were frequently quite severe.

I believe I am warranted in the following conclusions: The arsenites, and carbolic plaster will protect against the plum curculio if they can be kept on the tree or fruit. But in case of very frequent rains the jarring method will not only be cheaper, but much more effective. Again, as our wild fruits are more cleared away we must have plums in our orchards to protect the apples from the curculio. When apples are seriously stung they become so gnarled and deformed as to be worthless. It will, pay, then, to set plum trees near by or among the apple trees. Then we will escape mischief among our apples from the curculio, and will only need to spray our apples once, to destroy the codling moth, and can treat the plum trees three or four times with Paris green or carbolic lime in case we have only occasional showers, or can jar the trees when the rains are very frequent. For the apples we can use London purple, one pound to 200 gallons of water. For the plums we must use Paris green, one pound to two or three hundred gallons of water. If the carbolic plaster is preferred, we use one pint of crude carbolic acid to fifty pounds of land plaster. This is thrown freely over the trees, so as to strike every plum on the tree, which is being treated.

Another very important practical point has been suggested by the past season's experience with these insecticides: I refer to the danger of applying them before the blossoms fall. Bees are quite as susceptible to these poisons as are the codling larva and curculio. In their good work of collecting nectar and fertilizing the blossoms, they are very certain to take the poison as well, if the trees have been sprayed. Of course there is no excuse for spraying at so early a date, as neither the curculio or codling larva commence their attack till the blossoms fall. Thus for the object in mind, as well as for the safety of the bees, delay should be insisted upon. I think we as scientists and all educated men should pronounce vehemently and with one voice against spraying our fruit trees with the arsenites till the blossoms have all fallen. We should even go farther: We should secure the enactment of laws which would visit any such offense with fine and imprisonment. Such laws would prove a ready and active educator.

In the past season, many beekeepers have lost severely from the neglect of their fruit growing neighbors to observe this caution. I will only mention two cases: Mr. John G. Smith, Illinois, writes: "One of my neighbors owning an orchard of about one hundred acres of apple trees, sprayed the trees with Paris green and water just as they were in full bloom. The result is that ten or twelve beekeepers are ruined." The image no less than the larva and pupa were destroyed. Mr. J. A. Pearce, Grand Rapids, Mich., was also a heavy loser from the same cause. His bees likewise died in all stages of development.

It is well to remember and to urge that this loss is not confined to the beekeeper, for the fruitgrower as well as the apiarist needs the bees and work to insure his best success. It only requires, then, that our people know the truth, to insure against loss in this direction.

INJURY TO THE FOLIAGE.

Another practical question of no small moment in this use of the arsenites refers to injury to the foliage of the trees treated. In an elaborate series of experiments the past season, we desired to learn the effect on different trees of the different arsenites, and whether the date of treatment and atmos-

pheric condition had any influence. A tabulated statement of the result of the experiments upon various trees at different dates is given, from which the following conclusions are drawn:

First, London purple is more injurious to the foliage than is Paris green; and white arsenic—arsenious acid—is more harmful than is either London purple or Paris green. This is doubtless owing to the soluble arsenic which is quite abundant in London purple, and almost absent in Paris green. It was noticed that the colored water after London purple fully settles is very destructive to foliage, while analine is not at all harmful. This agrees with the experiments of Prof. C. P. Gillette, made in 1888, where white arsenic was found very destructive to foliage.

Secondly, peach foliage is especially susceptible to injury, and cherry foliage the least so of any of the kinds treated.

Thirdly, it would seem that London purple and white arsenic, used just before a rain, are more harmful than when used during a drought. We not only saw great injury when a rain followed spraying within two or three days, but secured the same results by spraying, soon after treatment, with pure water. This also accords with the view that the injury comes from the presence of soluble arsenic.

Fourthly, it would seem that spraying soon after the foliage puts out, is less harmful than when it is delayed a few days, or better a few weeks. For ten years I have sprayed both apple and plum trees in May, and for several years with London purple; and often used a mixture as strong as one pound to one hundred, or even fifty gallons of water. Yet in most cases no damage was done. This year I sprayed several trees in May, using one pound to one hundred gallons of water with no damage. In June and July spraying the same trees with a mixture only one half as strong did no slight injury. The fact, if fact it be, accounts for the few reports of injury in the past, even with a stronger mixture, and the frequent reports of damage within a year or two, even with a dilute mixture. Then the spraying was confined to May; now it reaches to June, or even to July.

Fifthly, London purple may be used on apple, plum, cherry, pear, and most ornamental trees, but on these should never be stronger than one pound to two hundred gallons of water. If the application is to be repeated, as it must be for the curculio, to prove effective, or if it is to be used in June or July, Paris green should be used, in the same proportion as above, or else we should use one pound of London purple to three hundred gallons of water. I now think that this necessity is more due to time of application than to the fact of increased quantity of the poison.

Sixthly, if the arsenites are to be used on the peach, to defend against the curculio, Paris green only should be used, and that not stronger than one pound to three hundred gallons of water. With the peach the poison is not only absorbed, coloring the tissue purple or brown, but even the petiole or stem of the leaf is weakened, and the leaf falls. Thus in several cases where we used London purple, one pound to two hundred gallons of water, or white arsenic, the peach leaves all fell off. White arsenic colors the tissue the same as does the London purple, showing once more that it is the soluble arsenic, not analine, that does the mischief.

Seventhly, the injury done to the foliage is never immediately apparent. It usually shows somewhat the second day, but the full injury is frequently not manifest till the fifth day, and often not till the tenth.

POISONING THE PASTURE UNDER THE TREES.

Another important practical question which I have tried to settle this season—1889—concerns the danger of pasturing under trees which have been sprayed with the arsenites.

A gentleman wishing to spray his orchard, in which he was pasturing seventy-five hogs, consulted me as to the wisdom of doing so without first removing the swine. I told him I believed there was no danger. I said: "Use a mixture, one pound of London purple to two hundred gallons of water, watch your hogs closely and if any seem affected remove all at once, and I will be responsible for damages to the amount of twenty-five dollars." The gentleman did so and reports no damage.

In the following experiments I used the mixture of twice the strength which should be used, that the experiment might be more convincing. I used one pound to one hundred gallons of water. In every case the spraying was very thoroughly done. Care was taken that every twig and leaf should be drenched.

In one tree a thick paper was placed under one-half of a rather small apple tree. The space covered was six by twelve feet, or seventy-two square feet. The paper was left till all dripping ceased. As the day was quite windy the dripping was rather excessive. In this case every particle of the poison that fell from the tree was caught on the paper. Dr. R. C. Kedzie analyzed the poison and found four-tenths (.4) of a grain. Tree No. 2 was a large tree with very thick foliage. Underneath this tree was a thick carpet of clover, blue grass and timothy just in bloom. The space covered by the tree was fully sixteen feet square, or equal to two hundred and fifty-six square feet. As soon as all dripping had ceased, the grass under the tree was all cut, very gently and very close to the ground. This was taken to the chemical laboratory and analyzed by Dr. R. C. Kedzie. There was found 2.2 grains of arsenic. Now as our authorities say that one grain is a poisonous dose for a dog, two for a man, ten for a cow, and twenty for a horse, there would seem to be small danger from pasturing our orchards during and immediately after spraying, especially as no animal would eat the sprayed grass exclusively. To test this fully, I sprayed a large tree over some bright tender grass and clover. I then cut the clover carefully, close to the ground, and fed it all to my horse. It was all eaten up in an hour or two, and the horse showed no signs of any injury. This mixture, remember, was of double the proper strength, was applied very thoroughly, and all the grass fed to and eaten by the horse. This experiment was repeated with the same result. I next secured three sheep. These were kept till hungry, then put into a pen about a tree under which was rich, juicy June grass and clover. The sheep soon ate the grass, yet

showed no signs of any injury. This experiment was repeated twice with the same result. It seems to me that these experiments are crucial and settle the matter fully. The analyses show that there is no danger, the experiments confirm the conclusion.

Thus we have it demonstrated that the arsenites are effective against the codling moth, that in their use there is no danger of poisoning the fruit, and when used properly no danger to the foliage, or to stock that may be pastured in the orchard.

August 17, 1889. A. J. COOK.

Chas. A. Green's Opinion of Wilder Early Pear.

My attention was called to the Wilder Early pear about six years ago. Since the grafts on the original tree came into bearing, this pear has borne heavy crops of beautiful specimens of fruit every season. I know of no other which bears so early and so regularly, every year.

Every year the fruit of Wilder Early has been shipped east, west, north and south, two hundred to one thousand miles, arriving in perfect condition, proving that it will bear shipment better than any early pear known. It can be picked when as hard as a stone, and can then be kept from two to three weeks in an ordinary room, when it turns to a golden hue, with bright red cheek, and though yet firm, melts in the mouth and delights the palate, as does no other pear at that early date.

It is one of the earliest of all early pears to ripen, about with the Summer Doyenne and Alexander peach, and before the early apples, at a date when no good pear is offered on the market. Therefore it will sell at a fancy price for fruit stands. There is no early pear to compete with it. Gifford comes nearest to being a rival, but Gifford is such a poor, straggling grower, no nurseryman can afford to grow the trees, therefore it is unobtainable and is not a rival. A good grower, good keeping, good shipping, superior flavored early pear is what is needed at this moment in our homes and on the market, and the Wilder Early appears to fill the bill.

As a vigorous grower the Wilder Early is unsurpassed. Last season the trees grew from the bud, in six months, to seven feet high, as thick as my thumb and as straight as a ramrod. There were no crooked trees in the rows. It grows like the Buffum or Keiffer. It holds its foliage and is thus far free from blight or other disease. It ripens its wood early and is perfectly hardy here. While not a large pear, Wilder Early is twice the size of Sackel as ordinarily grown, and its great productiveness and early fruiting are unquestioned.

I would enumerate the good points of the Wilder Early pear as follows: 1. Earliness, ripening about August 1st. 2. Superior quality, nothing of its season being so delicious. 3. No rotting at the core. We have kept it for weeks in a warm room, and never saw one rot at the core; yet this is the weak spot in nearly all early pears. 4. Long keeping and superior shipping qualifications. 5. Great beauty and productiveness, bearing every year and on young trees. 6. Great vigor, often growing six to seven feet from the bud in one season. 7. Hardiness and strong constitution, which enable it to thrive and endure neglect where many other varieties would prove a failure. Small, meaty core, with few seeds. The core is eaten and is as delicious as any other part. No one would waste the core of the Wilder Early.—Orange County Farmer.

A Jackson Celery Garden.

The Jackson Patriot gives the following description of the process of raising celery at "Spring Brook Farm" in Summit township, Jackson Co., by Messrs. Loud & Keyser. Mr. Loud, formerly of Chicago, bought the farm about six years ago, and upon looking it over he found some thirty or forty acres suitable for the propagation of celery. He at once set at work preparing the grounds under the supervision of L. P. Keyser, of Tecumseh, a gentleman of considerable experience in celery growing, and last season raised a large supply which found a ready market, but on account of the dry weather the stalks were short and consequently the prices were low and the crop a rather unprofitable one. This year Messrs. Loud & Keyser decided to raise nothing but the best White Plume variety and to make it grow so as to attain the highest degree of excellence and bring the very highest prices. To prevent a repetition of the damage caused by drought they adopted a novel system of irrigation which has proved a great success. On the west side of their celery field there is a large, never failing spring of water, the waste from which feeds a small lake near by. From this lake an outlet in the shape of a ditch has been dug through the field, in which flumes have been placed at intervals for the purpose of holding the water back. From this ditch drain tiles have been laid all through the field and when the flumes are closed the water backs up into the tile and filters through, keeping the ground moist all the time. The amount of water needed is regulated at the flumes.

The celery is now in various stages of maturity, a portion of it now being harvested and the balance still growing and expected to mature as rapidly as it can be cared for. Mr. Keyser has two systems of bleaching in operation. One is by placing boards along each side the rows, and the other is to bank up earth around the plants to near the top. The work of harvesting began about two weeks ago and will last until frost comes.

Messrs. Loud & Keyser have a very complete system of cleaning their celery, which leaves it in the best possible condition. After it is pulled and the outside stalks removed it is taken to the wash house, which is built directly over the spring referred to above, and thoroughly washed by means of hose until every particle of dirt has been removed. It is then tied up in bunches of one dozen roots each and packed into cases ready for shipment.

Thursday five dozen bunches of extra fine celery were shipped to Ohio. This had been ordered for a special occasion, and was some of the very choicest ever grown in this section. The five dozen bunches, when ready for shipment, weighed 107½ pounds, an average of over twenty pounds per bunch. When it is stated that ordinary celery weighs only eight to twelve pounds per bunch it will be seen that these were unusually fine specimens. They are now shipping about one hundred dozen bunches per day, the most of it being taken by Howard & Solon, of this

city. The celery has a peculiarly agreeable flavor and the stalk is brittle and of fine fibre.

Near the wash house a large outdoor cellar has been constructed which will be used during the late fall and winter in storing celery. About February 14 it will be transformed into a hot house and the seeds will be sown for next season's crop. Mr. Loud has great faith in the celery industry and expects to fill his land which is suitable for growing this crop as rapidly as possible. Next season he expects to put in twenty-five acres.

Dipping Valencia Raisins.

The climate in the Valencia district of Spain is such that the raisin growers are kept in constant dread of damaging rains during the raisin curing season in the latter part of August, September and October. A constant watch is kept for approaching storms, but notwithstanding their vigilance in this respect, great damage is done each season to the Valencia raisin crop. Last season it is estimated that at least 10,000 tons of raisins were damaged by the rain and made unfit for market. To hasten the drying, in their anxiety to avoid these damaging rains, Valencia growers frequently take the raisins up from the drying grounds before they are properly cured. This action on their part has a ruinous effect upon their keeping qualities. In order to shorten the drying time, Valencia grapes after being harvested are dipped in boiling lye, much in the same manner as California growers dip prunes to crack and shrivel the skin. The lye in which the fruit is dipped, in the place of being made with water, is prepared from grape juice and is made of sufficient strength to slightly crack the skin of the grape during the plunge bath with the lye boiling at a temperature of 212 degrees Fahr. Immediately upon removal from the kettle, skilled workmen examine the skins of the grapes to ascertain if they are properly cracked or shriveled; if not, they are plunged again into the boiling lye. After being properly scalded, they are taken to the drying ground, spread out and allowed to remain from seven to ten days, according to circumstances, and when properly cured are removed to the packing house and packed under pressure in boxes holding about 33 pounds. The process of dipping raisins grapes is a delicate one, requiring great skill and care on the part of the operators. The dip must be more or less rapid according to the thickness of the skin and its resistance, which necessarily varies with fruit from different portions of the same vineyard. Valencia raisins are not recognized by the trade as good keepers, neither do they possess a large amount of sugar; but, if the dipping solution has been allowed to get too hot and the grapes are more than ordinarily rich in sugar, the keeping qualities of the raisins will be very much impaired, as they will mould, candy and become sour and unsalable in a very short time.—California Fruit Grower.

Vigor Repelling Insect Attack.

The other day I was showing a prosperous farmer the benefits conferred by irrigation and the free use of fertilizers on the vigor of apple and pear trees and the smoothness of size of the fruit, and mentioned the circumstances how Prof. Forbes and McMurtrie, of the Illinois University, had succeeded in getting the better of the elch bug, by the use of phosphate and potash fertilizers. Upon this he related his experience of 40 years ago in Michigan, at the time the Hessian fly threatened the existence of the crop; how on rich soils judiciously manured the wheat survived the attacks, while on thin and poorly cultivated lands whole fields were ruined. Then I took him to an apple tree to which fertilizers had been freely applied, but the water withheld, and then he had opportunity to see knotty and wormy fruit falling prematurely, and of that remaining on the tree, more than half the apples stung. Then we put the facts as the wheat and the fruit together, and came to the conclusion that if good cultivation and high manuring put sufficient vigor in the wheat plant to repel the attacks of the Hessian fly and the elch bug, copious irrigation, clean cultivation and the liberal use of fertilizers on the apple and pear, might be the causes which prevented the attacks of the codling moth and the curculio.

Eastern fruit-growers have these 30 years

been warning their California brethren that they must prepare for an invasion of the insect enemies which have devastated the orchards of the Northern and Middle States. And the fruit sent us this year from the Pacific coast is as large, fine and smooth as it ever was, and much cheaper. Whether the insects have failed to cross the mountains, or whether the choiceness of California fruit is due to irrigation, fertilizers and careful cultivation, I am not certain, but I am inclined to, and shall hold, the latter opinion until I am better informed.—B. F. Johnson, in Country Gentleman.

Saving Flower Seeds.

A large part of the flower-loving people, probably, take no account of seed-saving, and depend each year upon the seedsmen for their supply of flowers. This is, perhaps, just as well, provided care is taken to select only from the best. Choice improved varieties of almost anything have lost some of their seed-producing qualities by artificial growth or cultivation; hence, the best varieties of flowers are always the highest in price. Besides, it takes time in the selection; all of which goes to make up the cost at which a thing can be put upon the market. A seed-raiser roots out all poor specimens from his beds as they show themselves, so that crosses from poor flowers do not occur. If any new color, size, quality or other peculiarity worthy of perpetuating is observable, the seed is saved separately from these. The next year, in flowering the peculiarity, it is perhaps more pronounced. This, followed for a time, forms a new strain, and some distinctive name is given to the improvement. All free-flowering and seeding plants may by this process be changed and improved from their condition in a state of nature. Some have the direction centered in one part; others in another. The variation may be that the color of the flower is satisfactory, but the substance of the petals is too thin; then the selection goes to such as are firmer and thicker. Then again, the form perhaps is ragged, and wants shape. Breeding from the best looking to this end will remedy this speedily. Both of these points

may be all right, but the growth of the plant is too loose and unsightly; then the more compact and dwarfier growers are the ones to save from. Take the case of the old zonal, or horso-shoe geranium. For years it went by the name of scarlet geranium, and only that color was known, and ragged at that, with single flowers only. Now we have scarlets, whites and pinks of the clearest shades, both double and single, with innumerable intermediate good qualities, shades and blendings. These changes came, one at a time. One year would be a white, then a rose color, then a double, and so on. All has been brought about by selection, and mostly a little at a time. What has been done in one plant can be done in many others. The field is open. Very simple flowers, as now grown, may have many hidden beauties to pay those who pursue them. It is fascinating to those who enter the lists, and often combines pleasure with profit.—Horticultural Times.

Gooseberries.

It is believed by a Massachusetts gentleman of wide observation that the sale and use of gooseberries in this country might be greatly extended by judicious effort on the part of growers and dealers. There are several American varieties that are enormous bearers and the bushes in general are free from disease. The taste for gooseberries, like the taste for celery and tomatoes, has to be acquired by many persons, but if the fruit was placed in market at the low price at which one could afford to grow it and dealers would make an effort to introduce it and keep it before the people, it would before long find an increasing demand. Gooseberries, cooked when nearly grown but still green, make a sprightly sauce that is usually liked better and better as the taste becomes familiar. The crop is in market condition from two to three weeks and is far less perishable than most small fruits. The berries may be gathered by a machine resembling a miniature cranberry rake, running it along the under side of the branches. Winnowing will remove the leaves, and screens will sort the several sizes. The gooseberry is not fully appreciated in this country by grower or consumer.—N. E. Farmer.

Horticultural Items.

JOHN ACKER, of Pleasantville, Westchester County, N. Y., raised a potato weighing 2½ pounds and perfectly proportioned.

We were shown a peach of the Late Crawford variety, from the orchard of Andrew Hunt, of Branchville, that measured 11 inches in circumference and weighed 11½ ounces. It could hardly be called exceptionally large, as the peaches from that particular tree were all of enormous size.—Orange County Farmer.

WM. WARNER, of Ludington, has one of the largest plum orchards in the State. It numbers over 5,000 trees, there being 33 distinct varieties. Every tree this season contained more or less fruit, a conservative estimate placing the total yield at over 1,000 bushels. In addition to several thousand peach trees, he has also 28 acres of apple orchard. His fruit crop this season will probably net him \$2,000.

The health department of Hamburg has refused American evaporated apples admission to that port, except under a chemist's certificate that they are free from anything harmful to health. It is said that samples of evaporated apples analyzed at Hamburg showed from .02 to .43 per cent oxide of zinc. It is supposed this poisonous element was taken from the galvanized iron trays on which they were dried.

A CORRESPONDENT of the N. Y. Tribune says: "When topping the turnips for storage this fall let the farmer's wife who wishes to increase her pin-money or account at the savings bank see to it that a few bushels are left with roots on and tops not cut too closely for future growth. Set these aside where the cook will not find them. Next spring plant them for seed. Grocers are glad to get the seed to sell. I sometimes sell \$5 worth of a short row, and I seldom make money in any easier way on the farm."

M. CRAWFORD, well-known Ohio nurseryman, says the natural support of the grape vine is the tree. He would encourage farmers to grow grapes on trees for their own use, if they have not time to grow them in any better way. Grapes rot less on trees than in vineyards. There is a right and a wrong way of even getting a vine into a tree. It will be a slow process to plant a vine at the root of an established tree and train it up the body. The proper way is to plant it at some distance from the tree and grow it on a stake until the end of the second year. By that time one should have a ripe cane six or eight feet high. It may then be trained into the branches, after which it will take care of itself. It will grow very rapidly until it reaches the top. While growing fast it will develop few fruit buds, but when it can go no higher, and must grow horizontally, if at all, will bear abundantly.

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P. B. BROMFIELD, Mgr.

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MICHIGAN FARMER.

DETROIT, SATURDAY, SEPT. 25, 1889.

This Paper is Entered at the Detroit Post-Office as second class matter.

STOCK SALES IN MICHIGAN.

The following dates are claimed by Michigan breeders for sales of stock:
OCT. 16—Coe Bros., Kalamazoo, Hereford cattle, Percheron Horses and Poland-China swine.
J. A. Mann, Auctioneer.
OCT. 23—W. C. Wilson, of Wixom, Short-horns.
J. A. Mann, Auctioneer.
OCT. 24—A. W. Bissell, Pawama, Merino Sheep and Poland-China swine. Sale to be held at Ionia. J. A. Mann, Auctioneer.

WHEAT.

The receipts of wheat in this market the past week amounted to 149,526 bu., against 157,350 bu. the previous week, and 253,143 bu. for corresponding week in 1888. Shipments for the week were 72,309 bu., against 128,143 bu. the previous week, and 240,425 bu. the corresponding week last year. The stocks of wheat now held in this city amount to 223,437 bu., against 161,905 bu. last week, and 183,359 bu. at the corresponding date in 1888. The visible supply of this grain on Sept. 21 was 17,196,573 bu., against 15,697,455 bu. the previous week, and 31,011,175 bu. for the corresponding week in 1888. This shows an increase above the amount reported the previous week of 1,499,116 bushels. As compared with a year ago the visible supply shows a decrease of 13,814,603 bu.

The market has been an improving one all week, and there is a substantial gain in values as compared with our last report. This advance is general in both spot and futures, the latter showing the greatest gain. No. 2 red is now higher than No. 1 white. Arrivals are not crading as low as two weeks ago, but much lower than a week ago. There was an adjournment of the Board on Thursday to attend the Exposition, hence no prices are quoted for that day. Yesterday the market opened active and higher, but lost the advance before the close. Chicago, New York and St. Louis were also lower than the previous day. Liverpool and London reported strong markets, and the latter was higher.

The following table exhibits the daily closing prices of spot wheat in this market from September 21 to September 27th inclusive:

No. 1	No. 2	No. 3
Sept. 21	73 1/2	72 1/2
Sept. 22	73 1/2	72 1/2
Sept. 23	73 1/2	72 1/2
Sept. 24	73 1/2	72 1/2
Sept. 25	73 1/2	72 1/2
Sept. 26	73 1/2	72 1/2
Sept. 27	73 1/2	72 1/2

Futures are all higher than a week ago, and have shown more activity. Yesterday there was a slight decline from the supposed range of values of the previous day, but as there was no session of the Board prices were based only on estimates.

The following is a record of the closing prices on the various dates in futures each day during the past week:

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
73 1/2	73 1/2	73 1/2	73 1/2	73 1/2	73 1/2	73 1/2
72 1/2	72 1/2	72 1/2	72 1/2	72 1/2	72 1/2	72 1/2

Referring to the big crop reports from Dakota, a gentleman of Detroit who cultivates 1,000 acres near Bismarck in that territory and has just returned from there says that his wheat was too short to be cut with a machine; that after cutting he offered to sell the lot for 600 bushels in a lump, whereas a year ago he harvested 9,000 bu. from the 1,000 acres. The same party says his yield is not an uncommon one this year, and he believes that vast tracts of land in the territory will not average one bu. per acre.

The quantity of wheat on ocean passage is about 8,000,000 bu. less than at the corresponding time last year. The visible supply in this country is much less, with only a small part of it grading as No. 2. The crop statistician at Washington is quoted as saying that the wheat crop of Europe is 10 per cent short of a full one. This means at least 130,000,000 bu. of a shortage as compared with last year, and is a big deficit, though not so large as the earliest reported shortage obtained from the figures submitted to the Vienna Congress. The government crop report for Canada makes the crop of that country 6,000,000 bu. less than indicated by the July report, and 8,500,000 bu. less than the average for 1882 to 1888 inclusive.

Darabush estimates that Europe will require to import during this crop year the equivalent of 230,000,000 bu. wheat. Minnesota flour has been advanced 15c per bu.

The following table shows the quantity

of wheat "in sight" at the dates named, in the United States, Canada, and on passage to Great Britain and the Continent of Europe:

	Bushels.
Visible supply.....	14,008,532
On passage for United Kingdom.....	14,008,532
On passage for Continent of Europe.....	2,604,000
Total bushels Sept. 7, 1889.....	31,100,062
Total previous week.....	32,028,716
Total two weeks ago.....	30,651,720
Total Sept. 8, 1889.....	31,013,020

The estimated receipts of foreign and home-grown wheat in the English markets during the week ending September 14 were 430,300 bu. more than the estimated consumption; and for the eight weeks ending August 31 the receipts are estimated to have been 200,824 bu. more than the consumption. The receipts show an increase for those eight weeks of 2,177,632 bu. as compared with the corresponding eight weeks in 1888.

Shipments of wheat from India for the week ending Sept. 14, 1889, as per special cable to the New York Produce Exchange, aggregated 460,000 bu., of which 280,000 bu. were for the United Kingdom and 180,000 bu. for the Continent. The shipments for the previous week, as cable, amounted to 440,000 bu., of which 400,000 went to the United Kingdom, and 40,000 bu. to the Continent. The shipments from that country from April 1, the beginning of the crop year, to Sept. 14, aggregated 12,800,000 bu., of which 9,000,000 bu. went to the United Kingdom, and 3,800,000 bu. to the Continent. For the corresponding period in 1888 the shipments were 19,930,000 bu. The wheat on passage from India Sept. 3 was estimated at 2,904,000 bu. One year ago the quantity was 3,976,000 bu.

The Liverpool market on Friday was quoted strong, with good demand. Quotations for American wheat were as follows: No. 2 winter, 6s. 9 1/2 d. @ 6s. 10 1/2 d. per cental; No. 2 spring, 7s. 1 d. @ 7s. 3 d.; California No. 1, 7s. 3 1/2 d. @ 7s. 4 1/2 d.

CORN AND OATS.

CORN.

The receipts of corn in this market the past week were 7,552 bu., against 1,944 bu. the previous week, and 33,807 bu. for the corresponding week in 1888. Shipments for the week were 925 bu., against 5,933 bu. the previous week, and 12,604 bu. for the corresponding week in 1888. The visible supply of corn in the country on Sept. 21st amounted to 13,652,727 bu., against 12,951,980 bu. the previous week, and 9,960,609 bu. at the same date in 1888. The visible supply shows a decrease during the week indicated of 329,253 bu. The stocks now held in this city amount to 8,859 bu. against 9,574 bu. last week, and 30,690 bu. at the corresponding date in 1888. Corn has lost the advance noted a week ago, and is now dull at 34 1/2 c. per bu. for No. 3 spot, and 34 1/2 c. for October delivery. In the London and Liverpool markets corn is higher and firm. Both receipts and stocks are light at this point, and any increase in the demand sends up prices for the time; but there is a widespread belief that new crop corn will be very cheap. At Chicago the market was a shade better yesterday under an active demand. No. 2 spot sold at 31 1/2 c., October delivery at 31 1/2 c., and December at 31 1/2 c. per bu. There was a slight decline yesterday at New York.

The Liverpool market yesterday was quoted firm with fair demand. New mixed western, 4s. 3 1/2 d. per cental. In futures September sold at 4s. 2 1/2 d., and October at 4s. 1 1/2 d.

OATS.

The receipts at this point for the week were 63,033 bu., against 47,475 bu. the previous week, and 49,153 bu. for the corresponding week last year. The shipments for the week were 27,676 bu., against 13,095 bu. the previous week, and 30,551 bu. same week in 1888. The visible supply of this grain on September 21st was 5,925,570 bu., against 5,915,944 bu. the previous week and 5,925,679 bu. at the corresponding date in 1888. The visible supply shows an increase of 12,625 bu. for the week indicated. Stocks held in store here amount to 96,185 bu., against 79,836 bu. the previous week, and 62,693 bu. the corresponding week in 1888. Oats having got down to about the lowest possible range, rule very steady. No. 2 white are quoted at 23c. No. 3 white at 21 1/2 c., light mixed at 23 1/2 c., and No. 2 mixed at 21 1/2 c. per bu. Receipts and demand keep well balanced, and it is not likely there will be much change in values during the fall months. At Chicago there has been a slight decline from the very low range of prices quoted a week ago. Spot No. 2 mixed are now quoted at 19 1/2 c. per bu., October delivery at 19 1/2 c., and December at 19 1/2 c. Yesterday there was a better demand in that market, and it closed firm. The New York market is fairly active and firm, but prices show a decline in both spot and futures during the week. Quotations yesterday were as follows: No. 2 white, 25 1/2 @ 25 3/4 c.; mixed western, 24 1/2 @ 25 c.; white western, 25 @ 25 1/2 c. In futures No. 2 mixed for September closed at 26c. October at 25 1/2 c. and November at 26 1/4 c. per bu.

DAIRY PRODUCTS.

BUTTER.

The market is in about the same condition as a week ago, with perhaps a stronger feeling in fancy dairy, which is very scarce. For that grade of butter 17 @ 18c per lb. would be paid, while fair to good dairy is held at a range of 13 @ 16, with a fairly active demand. Creamery is held firm at 16 @ 21c per lb., the latter only for choice. The tendency of the market is upwards. At Chicago the market is quoted strong, particularly in the finest grades, which have advanced. Quotations yesterday were as follows: Good to choice Western creamery, 21 @ 22c per lb.; Extra choice or fancy, 24 @ 25c per lb.; fair to medium, 18 @ 20c per lb.; 18 @ 21c; poor to streaked lots, 10 @ 15c; packing stock, 7 1/2 @ 8 1/2 c. The New York market is very firm for really choice butter, which is not coming forward in sufficient quantity to meet the demand. Prices are higher on all grades, and have probably reached the top range for the present.

Quotations in that market yesterday were as follows:

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Creamery, State, pale, fancy..... 22 1/2
Creamery, State, pale, fancy..... 22 1/2
Creamery, State, pale, fancy..... 22 1/2
Creamery, State, pale, fancy..... 22 1/2

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creamery, Western, June, ordinary..... 17 @ 19 1/2
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run it a half mile further on, and secured \$10,000 in greenbacks and a lot of Mexican silver.

Foreign.

Wilkie Collins, the English novelist, died on the 23rd, about 64 years of age.

The French Government has assumed control of the telephone service in that country, and made it part of the postal department.

The Sultan of Morocco accedes to the demands of Spain regarding the release of the Spanish sailors captured by the Rifa, and taken into the interior to be sold into slavery.

Rita Cook, an English poetess of some renown, died at Weymouth, England, on the 25th. She was born in 1818. Her writings were considered of sufficient merit to win her the pension of £100 yearly which the English government bestows upon certain literary people.

The recent elections in France have proved very discouraging to the Boulangier faction. The Republicans were successful, and the now stronger in the council than since Ferry's ministry went under. Boulangier's failure is complete. Ferry was beaten, and it is believed some Republican member of the council will resign in his favor.

A French savant, M. D. Carboneau, has discovered how to make silk without silkworms, and some pieces of silk made by his method are on exhibition at the Paris Exposition. It is done by a new chemical process, of which the guiding idea is that the production of silk by the worm is the result of spinning a liquid, and a solution of colloid is the basis on which the discovery was made.

The newspapers of France, Spain, Austria, Hungary, and other European countries having commercial relations with the South American States, are greatly exercised over the proposed United American Congress, to be held at Washington with the avowed purpose of uniting the Americas in closer commercial and international relations, an action which European merchants deprecate as calculated to deprive them of their best markets for many lines of goods by diverting the channels of trade to the United States.

NEW ADVERTISEMENTS

LARGEST AND FINEST STOCK

TREES

FRUIT and Ornamental, Grape Vines, Berry Plants, Shrubs, Roses, etc., and Wholesale and Retail. Catalogues Free.

I. E. ILGENFELTZ & SONS,
MONROE NURSERY, MONROE, MICH.

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OAKLAWN AS EVER PRE-EMINENT
PRIZE-WINNING RECORD FOR 1889.

OF THE HORSES PURCHASED THIS YEAR FOR IMPORTATION TO THIS ESTABLISHMENT THERE ARE THE

WINNERS OF EIGHTY-EIGHT PRIZES

At the French Fair, and of these there are the

WINNERS OF FORTY-TWO FIRST PRIZES.

At the Universal Exposition, Paris, 1889, prizes were awarded to horses purchased this year by M. W. Dunham, as follows:

PERCHERONS
For Stallions, Four Years Old, - - - - - First Prize.
For Stallions, Three Years Old, - - - - - Second Prize.
For Mares, Four Years Old, - - - - - First Prize.
For Mares, Three Years Old, - - - - - Second Prize.
For Mares, Two Years Old, - - - - - First Prize.

FRENCH COACH HORSES
(See in competition.)
For Stallions, Four Years Old, - - - - - First Prize.
For Stallions, Three Years Old, - - - - - Second Prize.
For Stallions, Two Years Old, - - - - - First Prize.
For Stallions, One Year Old, - - - - - Second Prize.
For Stallions, Class: Large Size, - - - - - First Prize.
For Stallions, Class: Medium Size, - - - - - First Prize.
For Stallions, Class: Small Size, - - - - - First Prize.
For Stallions, Class: Very Small, - - - - - First Prize.
For Mares, - - - - - First Prize.

Of the winners of the NINE FIRST PRIZES of the SOCIÉTÉ HIPPIQUE PERCHERONNE of France for 1889 and 1890, purchased this year for importation to America, those purchased for Oaklawn are as follows:

Brilliant 1111, 1919 by Fenelon 28, by Brilliant 750, won First Prize, Four-year-olds, 1889.
Marathon 10386 by Voltaire 43, by Brilliant 750, won First Prize, Four-year-olds, 1889.
Marathon 10386 by Voltaire 43, by Brilliant 750, won First Prize, Four-year-olds, 1889.
Belle 15216 by Naborne 77, by Brilliant 750, won First Prize, Four-year-olds, 1889.
Sennie 20479 (dam Robin 1681, by Brilliant 710, won First Prize, Three-year-olds, 1889.
Sarah Bernhardt 18543 (by Brilliant 607, by Brilliant 750, won First Prize, Two-year-olds, 1889.

THE ABOVE SHOWS THAT
EVERY FIRST-PRIZE PERCHERON MARE OF THE
UNIVERSAL EXPOSITION, PARIS, 1889,

AND OF
THE GREAT SHOW OF THE SOCIÉTÉ HIPPIQUE PERCHERONNE
FOR THIS YEAR, WAS PURCHASED FOR OAKLAWN.

THE COMPLETE RECORD

Will show that every stallion four years old or over that has ever been awarded the first prize at the shows of the Société Hipnique Percheronne has come to Oaklawn, that every stallion three years old or over that has ever been awarded the first prize at this show has come to Oaklawn, that every stallion two years old or over that has ever been awarded the first prize at this show has come to Oaklawn. Thus every stallion of any age with the exception of five which have been awarded a first prize at this show has been purchased for Oaklawn. The above evidence sufficiently demonstrates that the best specimens of the breed may be found at Oaklawn.

Nearly TWO HUNDRED HEAD arrived August 23. EIGHTY more to follow. Included are a large number of

FRENCH COACH STALLIONS AND MARES

Of the highest degree of excellence and the most renowned blood lines - among them the winners of TWENTY FIRST PRIZES at St. Lo, Paris, Vincennes, and Caen, and the great mare Helmine, the winner of the French Derby three years old, and the fastest mare of her age ever produced in her country, is the sister to four of them.

Those desirous of establishing a first-class stud will find at Oaklawn typical animals, male and female, of the very choicest breeding.

A SATISFACTORY BREEDING GUARANTEE GIVEN WITH EACH ANIMAL SOLD.

Carriages at all trains. Send for 20-page illustrated catalogue. Address

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CLEVELAND & SHIRE HORSES.

300 Young and Vigorous Stallions and Mares of Choicest Breeding now on hand.

LARGE IMPORTATION RECENTLY ARRIVED.

I will make special prices and liberal terms to parties buying before winter.

200 High-Bred HOLSTEIN-FRIESIAN CATTLE; Deep Milking Strains, at Low Prices.

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—BREEDERS AND IMPORTERS OF—

Clydesdale, Shire and Cleveland Bay Horses,

AND SHROPSHIRE SHEEP.

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Shorthorn Cattle and Poland-China Hogs.

Forty choice Shropshire Ram Lambs, 12 Imported Rams, and Imported and Home-Bred Ewes for sale. Four fine Old Sire Stallions, two Imported Clydesdales and one Imported Cleveland Bay for sale. All registered in both English and American Stock Books.

SHORTHORNS.

A number of yearlings and bull calves for sale. Also stock bull Per's Oxford 4438. Prompt attention given correspondence.

GALBRAITH BROS.,

Still occupy the foremost position as

breeders and importers of

CLYDESDALES

And ENGLISH SHIRES.

Seven importations already received in 1889, including many of the choicest specimens and most successful prize winners in Great Britain. The only firm who have during the last year won the Highest

Nearly 300 Stallions now on hand, including a few choice Suffolk, Hackneys, and Cleveland Bays. Our buyers facilities are admitted to be unequalled and every animal in the stud is guaranteed. Buyers cannot afford to pass up the chance of seeing our present stock.

GALBRAITH BROS., Janesville Wis.

PUBLIC SALE! Cleveland Bay Horse Company

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PAW PAW, - MICH.

SHORTHORNS!

OF PURE BRED

SHORTHORNS!

Will be held on the farm of W. M. WIXOM, one half a mile from W. M. Wixom, at the residence of the Flint & Pere Marquette and the Michigan Air Line Division of the G. & T. R. R.'s

Wednesday, Oct. 23d, '89,

W. C. WIXOM, of Wixom, Mich.

J. A. MANN, Auctioneer.

To Breeders & Merinos

MRS. L. P. CLARK,

OF ADDISON, Vt.

Offers for sale her celebrated young ram

"GRAND VIEW."

Also a few other yearlings and two-year-olds. She also has for sale a very fine party of

RAM LAMBS

Among them "BIG MAN," weight at six months 65 lbs. Address all inquiries as above.

SHROPSHIRE FOR SALE.

A few registered Shropshire rams from imported stock for sale by

F. E. SCOTT & SON,

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SPRINGBROOK FARM

DELHI MILLS, MICH.

Shorthorn Cattle

—AND—

MERINO SHEEP!

The Shorthorn herd on this farm was never in better shape than at present.

Lord Hilpa 63417 and Imp. Bar-

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AT HEAD OF HERD!

Several Choice Young Bulls for Sale,

Ready for service this spring.

ALSO A FEW CHOICE FEMALES.

MERINO SHEEP.

Flock of over one hundred breeding ewes, yearlings and lambs of both sexes for sale.

Visitors always welcome. If you cannot come and look over the stock write for particulars. Address

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SHORTHORNS!

Represented by the following families:

Duchess, Barrington, Teo Rose, Kirklington, Place, Victoria Duchess, Crags, Young Mary, Constance, Moss Rose, and other high bred sires. At the head of the herd being the fine Duke bull

GRAND DUKE OF AIRDRIE 62933.

Young stock of both sexes for sale.

SHROPSHIRE SHEEP.

We are looking orders for

Shropshire Ram Lambs,

DROP OF 1889.

Reduced rates have been obtained on all ex-

press trains.

These Rams are all Registered,

and of the most approved line of breeding.

All the get of Imported Rectory Herd (3194)

and all from superior imported ewes.

The lambs were dropped in February, and are all broad-bodied, deep-fleshed animals, and excellent breeders.

JAMES M. TURNER,

Springdale Farm, Lansing, Mich.

MOUND SPRING

Breeding Farm,

J. W. HIBBARD, - PROPRIETOR.

Successor to C. Hibbard & Son,

Bennington, Shiawassee County, Mich.

BERKSHIRE SWINE

of the most fashionable families. Our herd has

won more prizes as the leading fairs of the State than any other herd in the past four years.

Pigs in pairs and trio sold.

SHORTHORNS.

The following families are represented in our

herd: Oxford Yankton, Young Phyllis, Adelaide, etc.

AMERICAN MERINOS,

Sheep of approved breeding. Individual merit

specialty. Personal inspection invited. Cor-

respondence solicited.

All stock recorded and guaranteed as represented.

OAK HILL

STOCK FARM,

C. E. LOCKWOOD, - Proprietor.

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Clydesdale Horses.

Young Contest No. 6409, Vol. 10, at the head of

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of Alwood stock, descended from flocks of L.

P. Clark, Edwin Hammond and W. R. Sanford.

Berkshire Hogs

of the most fashionable families.

All stock recorded or guaranteed as represented.

Stock for sale at all times.

HEREFORDS!

I have a few choice young

Bulls and Heifers for Sale

OF FINE BREEDING.

Prices reasonable. Catalogue furnished on ap-

plication. Call upon or address

WM. STEELE,

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SHORT HORNS

FOR SALE.

Bulls, heifers, cows and calves of choice milking

strains and sired by high bred bulls. For

particulars address

B. J. BIDWELL,

Township, Mich.

LEICESTER RAMS.

A few choice ones for sale for the fall trade.

Call on or address

A. F. WOOD,

MASON, MICH.

Lumber and Shingles Wanted.

I have 25 head of Shorthorns that I wish to

exchange for lumber and shingles. For par-

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DIRECTORY

OF

MICHIGAN BREEDERS

CATTLE.—Shorthorns.

A. J. COOK, Owosso, breeder of Shorthorn

Poetry.

AUTUMN DREAMS.

When the maple turns to crimson,
And the sassafras to gold;
When the gentian's in the meadow
And the aster on the hill;
When the moon is lapped in vapor,
And the night is frosty cold;
When the chestnut burrs are opened,
And the acorns drop like hail,
And the drowsy air is startled
With the thumping of the fall—
With the drumming of the partridge,
And the whistle of the quail;
Through the rustling woods I wander,
Through the jewels of the year,
From the yellow poplars calling,
Seeking her who still is dear:
She is near me in the autumn,
She, the beautiful, is near.
Through the smoke of burning summer,
When the weary wings are still,
I can see her in the valley,
I can hear her on the hill,
In the splendor of the woodlands,
In the whistling of the rill.
For the shores of earth and heaven
Meet, and mingle in the blue;
She can wander down the glory
To the places that she knew,
Where the happy lovers wandered
In the days when life was true.
So I think when days are sweetest,
And the world is wholly fair,
She may sometimes steal upon me,
Through the dimness of the air,
With the roses upon her bosom,
And the amaranth in her hair.
O, to meet her, ah! to meet her,
And to hold her gently fast,
Till I blessed her, till she blessed me—
That were happiness at last.
In the autumn of the past.
—Bayard Taylor.

A BRIDE'S LETTER.

Dear Helen, you will be surprised
To get a note so soon—the first
Bridal edition, unreserved—
And scribbled at my very worst.
I've but a pencil, as you see,
A leaf from Harry's diary torn,
And then I'm writing on my knee,
And feel a little bit forlorn.
We're on the train still, I'm alone;
Harry is in the smoking car,
These last two hours. My time's my own;
But, Helen dear, how strange men are!
Three days ago—time quickly flies—
And yet it somehow seems like years
Since all the kisses and good byes,
And all the trembling hopes and fears.
Of course he likes to smoke; but then
You saw how good he was,
Women were different from men,
Ah, yes, indeed! I find it so.
Most of my dreams seem disarranged;
Of course I'm happy; only life
Looks altered now—the day is changed—
I can't believe I'm Harry's wife.
And yet I know I am, for here
(What tiny morsels of a wreath may mar?)
I'm sitting quite alone, my dear,
And he is in the smoking car.

Miscellaneous.

PERSONALLY OR BY LETTER.

I am afraid I treated my brother Leo very shabbily. As soon as he had settled down at Wymaring, where he was managing the new coal-mine, and had built a pretty little cottage in the settlement there, he sent over for me to come and occupy it, and expected, I suppose, that I should keep house for him till his fortune was made and we could return to old England together.

He forgot that in Queensland a marriageable young lady is a very valuable and much-sought-after article. I had not been at Wymaring three weeks before I had half a dozen suitors. One of them—George Stewart, who had a sheep farm six or seven miles away—seemed quite as lonely as Leo, and he had a cottage waiting for me much prettier than my brother's; so after I had kept house for Leo for about six months, I changed my name, and residence, and went over to Stewart farm.

George did the best he could for Leo. He gave him, in exchange for me, his own servant, a half-witted Irishman who was wanted to wash, sew, and cook, as well as to look after a horse and a garden; but he was far too inventive and ingenious a cook for Leo's taste, and, as for sewing, he did not know how to use a thimble. Though I suppose it was complimentary to me, still I was very uneasy when I found how thoroughly dissatisfied Leo was with the change.

One evening he rode over to the farm, as he often did, about sunset. We were sitting out in the porch, George and I, and went to the gate to meet him and put up his horse.

"That Mike again!" Leo began as soon as he had greeted us, and would say no more till we were all seated in the porch together.

"Oh, that Mike!" he exclaimed again.

"Well, what is the matter this time?" asked George. "More original cookery?"

"No," groaned Leo; "he is gone!"

"Gone?" ejaculated George and I together.

"Yes, I wanted one of my best linen shirts, and I found he has cut it up into pocket-handkerchiefs; and very proud he was of it, too. And I'm afraid I must have discouraged him, because he has disappeared."

"That is a pity," said my husband, seriously; "he was an honest fellow and well-meaning—if he did get into a few mud-miseries."

Look here, Leo—you must get married yourself."

"Yes," I said, "get a wife for yourself, Leo."

"Hear, hear!" cried my brother, springing to his feet. "I am so glad that is your opinion, because I proposed yesterday!"

"Proposed?" exclaimed George and I. There was not a marriageable woman that we knew of for fifty miles round.

"For goodness' sake tell me to whom?" I inquired.

"Oh, you need not be frightened," he returned. "I'm not going to marry a native or the old hag who keeps the dram-shop. I have written her for her."

"For whom?"

"Dolly!"

"Dolly Devay? Good gracious! But you were never engaged, were you?"

"No; but I was always very fond of her. She can cook and sew, I feel certain; and I know she was very fond of me."

"But what did you say to her?" I gasped.

"Oh, I said I had never given a thought to any girl since I left her—"

"Especially as you have scarcely seen one," interposed George.

Leo went on without noticing the interruption.

"I said I wanted a wife, and asked her if she would come out here and marry me; I would meet her at Brisbane, and get the thing done straight off before coming on here, where we should live happily ever afterwards."

"Oh!" exclaimed George, whistling. "Is that all?"

"Oh, no! I sent her a piece of poetry that I am sure will bring her. I made it up for the occasion. Here is the first verse:—

"Hand in hand, little children, together,
We played when the breeze of the meadow
Shook all the bells of the heather,
Little sweetheart, do you remember?
The bells are all withered,
The heather is black,
And I am come back,
And I am come back."

Is it hand in hand still, little sweetheart?
Is it hand in hand, darling, forever?
"Fanny met!" grunted George.

"And there never was any heather at Bloxhorne, where you saw Dolly," I objected.

"No, it was stubble fields chiefly; but 'stubble' does not sound romantic enough. It is poetic license, you know."

"And you are not going back," said my husband.

"Poetic license!" ejaculated Leo again.

"She will never come!" I declared emphatically.

"I don't expect she will; but it is worth trying. There is not a girl in this place except the little Browns; and I can't wait eight years till they grow up. Just my luck—the only marriageable young woman ever imported was my own sister! But I do not see why Dolly should not come," he went on.

"I shall be in the agonies of suspense for a couple of months."

"You have not really sent the letter," I queried, for I could hardly believe it.

Leo assured me that he had. It was well on its way to Brisbane, if it was not already on board ship.

I could hardly realize that my brother had really sent Dolly Devay a proposal of marriage, but, when I did realize it, I felt very disappointed.

Dolly was not half good enough for Leo. She was a pretty little thing, no doubt, and could play the piano; but I could not remember anything else that she could do.

They were only jingling little pieces she played; but I knew it was no good saying anything to Leo now. I could only hope that she would not accept this offer which my brother seemed to be making so lightly. On thinking the matter over, I decided that she would not; the whole idea was far too absurd, and so I comforted myself.

"I can't help admiring Harry," said George, as we sat at breakfast a few weeks after Leo had started us with the news of his proposal—my husband was reading a letter from his brother in Melbourne, which the mounted postman had just brought in—"he is so delightfully cool!"

"What does he say?" I asked.

George handed me the letter. It certainly had a touch of sang-froid about it.

"Dear George:—I find I must go to England at once about the Wabang affair. I do not like leaving Amy alone, so I am sending her off to you." It began, and concluded with arrangements for our meeting his daughter at Canning, our nearest station town, which was connected by loop-line with Brisbane.

I handed back the epistle, laughing.

"Well, we have certainly plenty of room and of welcome for her," I said. "What kind of a girl is she, George?"

"Oh, you need not call her a girl!" he replied. "Remember, she is a year older than you. Harry's wife was dead and buried before I was fifteen."

"Let me see—she is very pretty, I think you told me?" I asked, anxious for a description of this young lady who was to swoop down upon us so suddenly.

"Yes, she is a very nice looking little thing. Why, bless me," he cried, suddenly, "a man is not forbidden to marry his brother-in-law's niece, is he? She will be just the girl for Leo."

The same idea had occurred to me. I had nearly dismissed from my mind all thoughts of my brother's absurd proposal to Dolly. I think George had forgotten about it altogether. He went on describing Amy's many virtues in such glowing terms that I did not know whether to feel jealous or fall in love with her.

When the girl herself arrived the next day, I was charmed with her. Her appearance on the scene was rather romantic. George had ridden over to Canning with a spare horse early in the afternoon, and I was expecting them to arrive together in the evening. About sunset Leo came over to see his new relative, and we were walking together down the cleared bridge-path, when Leo stopped suddenly.

"Listen," he said; "here they are!" and I could hear the sound of horses' hoofs in the distance. We would not see far, as the path wound so among the trees. "Why, there is only one horse!" added my brother.

"Bess is coming in as a gallop!"

"The tone of his voice and his manner made me apprehensive of danger."

"It is not a runaway!" I asked in alarm. Leo laughed to reassure me.

"Keep calm, little woman," he said, taking

ing off his coat and hat as he spoke, ready for action.

The next moment a horse galloped round the curve of the bridge-path, with a slight figure swaying in the saddle and leaning forward on the excited animal's neck. It passed me as I drew back into the bushes, but Leo sprang into the road, and, running with the horse, seized the bridle with both hands, putting his arm around the girl to do so. For a moment he looked a comical figure—at which, however, I felt not the slightest inclination to laugh—as he ran along by the side of the horse, pulling with all his might at the reins. Then Bess, feeling a strong and familiar arm restraining her, cooled down and gave in.

Almost before I knew what had happened, Leo had lifted the girl from her perilous seat and was walking by her side towards me, leading the panting horse by the bridle.

"Miss Stewart was in a great hurry to get to us, wasn't she?" he said, as he came up.

I expected to find our visitor almost fainting or on the verge of hysterics, but she seemed as cool as if nothing had happened.

"You will think me a very stupid rider, to begin with," she remarked, when I had welcomed her and inquired if she was hurt. "I could not get much practice in Melbourne."

Leo was just saying he thought her very calm and plucky, when George, who had been left far behind, arrived in hot haste to introduce us.

He found such a ceremony quite unnecessary. I had fallen in love with Amy already—she was such a bright, charming girl. Leo seemed to admire her, too; and I thought he must have forgotten Dolly, so I asked him what he imagined Miss Devay would have done had she been in Amy's place. The question seemed to make him exceedingly angry.

My love for Amy Stewart increased every day, for she appeared to be continually justifying the admiration I had felt for her at our first meeting. I do not know what Leo's first opinion of her was, so I cannot say whether it was strengthened or not. I only know that his evening visits became four times as frequent and encroached more and more on the afternoon. To prevent Amy from having any more perilous experiences on Bess, he was kindly instructing her in riding, and of course this necessitated frequent journeys over to our farm. Amy was rapidly developing into a skilled horsewoman. I wished Leo had taken half the trouble to teach me, and I told him so.

"Oh, you are so timid!" he said, by way of excusing himself. "Miss Stewart is afraid of nothing; there is some chance of teaching her how to manage a horse," and then he went off to play tennis.

George and Leo had formed a court in front of the house, and Leo had sent to Brisbane for an outfit. If it had not been for tennis, I should never have seen my brother; all this time would have been devoted to teaching Amy to ride.

I could not help thinking about the letter to Dolly Devay, which Leo seemed to have forgotten altogether. When I reminded him of it, he laughed and said:

"It is too absurd to think about; I must be driven out of my wits by my bachelor troubles. Dolly will box my ears for it, if I ever go to old England and Bloxhorne again."

"And don't you want Dolly?" I asked, innocently.

"No! I've changed my mind," he replied, and went away whistling, as though anxious to end the conversation.

I knew very well what that meant, and could not help wishing that he was not so positive about Dolly's refusal. I longed for a letter from England in reply; that would clear away my lingering uneasiness.

Meanwhile, Leo seemed to be living at our farm. I do not know how the mine got on—he did not seem to care; I suppose his house at Wymaring was lonely now that Mike was gone. Amy might have been practicing riding for a circus, so frequent and lengthened were her lessons.

One evening matters reached a climax. George had ridden over to Canning, and had not returned when Leo came in. He asked at once where Amy was; and, when I told him that she was out in the garden, he put on his hat again and turned to go, then came back, as if urged by a sudden impulse, and kissed me.

"Wish me luck, little sister!" he said. "I am going to ask Amy to be my wife."

The next moment he was gone.

"Dolly Devay may write 'Yes' or 'No'—it makes no difference now," I said to myself, with a feeling of relief; and I went on musing and thinking about him till the sound of a horse's hoofs outside roused me.

Thinking it was George, I ran out at once, and found the postman in front of the house, with a letter for George from England.

"I have one for your brother, too," said the man. "They told me at Wymaring that he was here, so I thought I might as well bring it on. Some people are in such a hurry for a bit of news from the old country."

I thanked him, and, taking the letter, glanced at the address; it was written in a woman's hand, and I felt certain it was the reply I had been expecting so anxiously. What would happen if Leo received two promises of marriage on the same day?

I decided at once that he ought at least to read this letter before he said anything to Amy, so I blew as loudly as I could a whistle George had given me to call him in—I could never manage the Australian "cooey."

Leo came almost directly—he could not have been far away.

"This is too bad, Mary!" he said. "I should not have come but that I thought you must be attacked by bushrangers or have set the house on fire. You have just spoilt it."

I did not answer him, but put the letter into his hand. He tore open the envelope, unfolded the paper inside, and glanced down at his face flushing crimson, and then turning deathly pale as he did so.

"Good heavens!" he gasped; "Dolly is on her way out to marry me! Oh, Mary, what can I do?"

"What have you said to Amy?" I asked.

"Nothing. I was just about to ask her

to be my wife, when I heard your whistle, and I came at once. I was sure something must have happened; but oh, Mary, I did not expect this. What a fool I have been to think I could never love a girl more than I did Dolly Devay! Love! I did not know what love was!" and he began pacing to and fro excitedly.

I could see Amy coming towards the house to learn what was the matter, and motioned to her to keep away. She evidently thought we were discussing a secret, as indeed we were, for she laughed and turned back.

"May I read the letter?" I asked.

Leo was holding it crumpled up in his clenched hand, but gave it to me at once.

It was a sweet little letter. Dolly had always loved him, she said, ever since she had known him; but, when he left England without speaking, she was afraid his feeling towards her was only one of friendship; she did not know how nobly he had determined to make a home before asking her to be his wife; and so on—very prettily put indeed. Dolly concluded by saying that she would arrive at Brisbane about a week after her letter.

"There is only one thing you can do, Leo," I said.

"Yes, I know that," he answered, quite calmly. "And I will do it. But, oh, Mary, it is hard judgment on my madness! Good bye!" and, taking up his hat, he went out to saddle his horse, and in a few minutes was galloping towards Wymaring without having bid Amy farewell.

The poor girl, when she came in a little later, seemed much surprised to hear that he was gone; but she was more surprised when four days went by and Leo neither came nor sent any message. She persuaded George to ride over and see if he was ill. Leo sent back that he was quite well, but very busy, and was just starting for Brisbane; he also forwarded me a note at the same time, in which he said:—

"DEAR MARY—I have not asked you to accompany me, as I want you to stay and prepare Amy for the news. I am afraid she loves me. Try to break it to her gently for the sake of your broken-hearted brother."

That did not read well from a bridegroom going to meet his bride, I thought, as I burnt the note.

There was not much doubt about Amy's love. The little artifices with which she would lead me to talk of Leo were charming and heart-rending. I felt that I never could tell her that my brother would come back from Brisbane a married man.

I wanted off the evil moment as long as I could. Three days went by, and then I dared linger no longer. I did not know how soon Leo might return; and, if Amy were not told, I felt that his coming back with his bride might kill her. On the evening of the third day I asked her to come for a stroll with me along the bridge-path where we had first met, so long ago, it seemed now. We walked along in silence, for I was wondering how to begin my story; and Amy must have been thinking of Leo, for when she spoke it was about him.

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But the next moment Leo himself appeared, galloping toward us to disprove my statement. He sprang from his horse and greeted us quite enthusiastically, evidently in radiant spirits. I wondered what could have happened. As long as Amy was with me my anxious curiosity could not be satisfied. I was in a fever of impatience as we walked up to the house together, Leo leading his horse.

As soon as we were indoors and he had gone to his room to change his dress after the journey, I hurried after him and knocked at his door.

"Come in!" he said, cheerily.

"What has happened?" I inquired, when I had shut the door behind me. "Hasn't she come?"

"Oh, yes—she came all right!"

"Leo, is she dead?"

"Oh, no!" he answered; "not so bad as that! She is only married!"

"Married?"

"Yes; the captain fell in love with her on the way out. Now I remember, she always was a flirt."

"And pray what did she say to you?"

"Oh, she was very frightened, and did not want to see me; but I promised to forgive her if she would vow never to tell anybody about my letter."

This promise Dolly Devay kept; so Amy never knew what had interrupted Leo's first proposal to her till long after their marriage, when she heard the whole story from his own lips.

High Officials Embarrassed.

There is a story of a Presidential excursion down to the Eastern shore of Maryland. The party embraced Secretaries Blaine and Windom and others. They went to church and were fortunate enough to hear an excellent sermon from the venerable Protestant Episcopal bishop of Maryland, who was there to administer the rite of confirmation. It was a rare pleasure to listen to a discourse from a clergyman who did not improve the occasion by referring to those high in authority or by preaching or praying at them.

I decided at once that he ought at least to read this letter before he said anything to Amy, so I blew as loudly as I could a whistle George had given me to call him in—I could never manage the Australian "cooey."

Leo came almost directly—he could not have been far away.

"This is too bad, Mary!" he said. "I should not have come but that I thought you must be attacked by bushrangers or have set the house on fire. You have just spoilt it."

I did not answer him, but put the letter into his hand. He tore open the envelope, unfolded the paper inside, and glanced down at his face flushing crimson, and then turning deathly pale as he did so.

"Good heavens!" he gasped; "Dolly is on her way out to marry me! Oh, Mary, what can I do?"

"What have you said to Amy?" I asked.

"Nothing. I was just about to ask her

to be my wife, when I heard your whistle, and I came at once. I was sure something must have happened; but oh, Mary, I did not expect this. What a fool I have been to think I could never love a girl more than I did Dolly Devay! Love! I did not know what love was!" and he began pacing to and fro excitedly.

I could see Amy coming towards the house to learn what was the matter, and motioned to her to keep away. She evidently thought we were discussing a secret, as indeed we were, for she laughed and turned back.

"May I read the letter?" I asked.

Leo was holding it crumpled up in his clenched hand, but gave it to me at once.

It was a sweet little letter. Dolly had always loved him, she said, ever since she had known him; but, when he left England without speaking, she was afraid his feeling towards her was only one of friendship; she did not know how nobly he had determined to make a home before asking her to be his wife; and so on—very prettily put indeed. Dolly concluded by saying that she would arrive at Brisbane about a week after her letter.

"There is only one thing you can do, Leo," I said.

"Yes, I know that," he answered, quite calmly. "And I will do it. But, oh, Mary, it is hard judgment on my madness! Good bye!" and, taking up his hat, he went out to saddle his horse, and in a few minutes was galloping towards Wymaring without having bid Amy farewell.

The poor girl, when she came in a little later, seemed much surprised to hear that he was gone; but she was more surprised when four days went by and Leo neither came nor sent any message. She persuaded George to ride over and see if he was ill. Leo sent back that he was quite well, but very busy, and was just starting for Brisbane; he also forwarded me a note at the same time, in which he said:—

"DEAR MARY—I have not asked you to accompany me, as I want you to stay and prepare Amy for the news. I am afraid she loves me. Try to break it to her gently for the sake of your broken-hearted brother."

That did not read well from a bridegroom going to meet his bride, I thought, as I burnt the note.

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NECESSITY UPON EVERY FARM
Economy, Exactness and Carefulness

acter of economy there is nothing that will be better. The high price of scales prevents farmers from providing themselves with them, and they are thus at the mercy of every dishonest party who may do business with. One of the very best of scales now on the market are those manufactured by the Chicago Scale Co., and for those of those who read the **FARMER** we have arranged with that company to supply orders same as usual, but at a great reduction. The prices are such that the saving of loss on a load of wheat, pork, poultry or butter, will pay the entire cost of the scale at the prices below and judge for yourself.

1—Barn Scale.



from $\frac{1}{4}$ pound to 900 pounds. Size of platform 7 by 36 inches.

Price \$18 00, and MICHIGAN FARMER one year's subscription \$2 00 extra; or \$30.

W.—Farm Scale.

from one pound to 6,000 pounds (3 tons)
platform 7 by 13 feet.

3—Grain and stock Scale.

This illustration shows a grain and stock scale. It features a small, simple wooden building with a gabled roof and a small porch. A large, heavy-duty wheel is attached to the side of the building, likely for weighing heavy loads. In the background, there is a large, rounded pile of grain, possibly hay or straw, which is the primary subject of the scale.

from two pounds to 10,000 pounds (5 tons); platform 8 by 14 feet.

\$45.50 and MICHIGAN FARMER one year.

Ordering, give the number of scale you select.

2 and 3 will include the beam, box, and full set of scales for setting up; either of these scales can be used for hay, grain, coal, stock and merchandise. The only difference is in the platform.

It will be boxed and delivered at the depot without extra charge. Every scale will be guaranteed by us and the price shown on the enclosed card.

one-third the usual prices for the same article to get the scales at above prices of course money must be sent to us, and the sender must be a subscriber to the FARMER.

cross all orders to

BBONS BROTHERS.
DETROIT, MICH

GRIFF'S SALE—NOTICE IS HEREBY
given that by virtue of a writ of fieri facias,
out of the Circuit Court for the County
of Wayne, State of Michigan, in favor of

and real estate of Bridget McGoldrick James McGoldrick, in said county, to me and delivered, I did on the thirteenth of September, A. D. 1889, levy upon all right, title and interest of Bridget McGoldrick and James McGoldrick, in and to the above described real estate, situated in the county of Wayne, State of Michigan, to-wit: Lot five (5) and the north half (½) of the six (6) of the subdivision of the east part of private section seven hundred and sixteen (119), being the north half of the late Edward Martin, according to and thereon recorded in Liber one (1) of page one hundred and sixty-three (163), which I shall expose for sale at public

at Detroit, September 17th, 1889.
 LOUIS B. LITTLEFIELD, Sheriff.
 By BENJAMIN F. BRISCOE, Deputy Sheriff.
 OMERY & CHEEVER, Plaintiff's Attorneys.
Detroit, Grand Haven & Milwaukee.

	Depart.	Arrive.
ing and Chicago Ex.	6:35 a m	*11:55 a m
ough Mail & Chicago	10:20 a m	*5:30 p m
ough Express.....	4:50 p m	*9:45 p m
ough Ex. with sleeper	8:00 p m	*8:00 a m
ough Ex. with sleeper..	10:50 p m	*11:40 p m

ly, Sundays excepted. * Daily.

Express leaving Detroit at 6:50 a m, 10:20 a m and 10:00 p m connect at Durand with trains on Grand & Grand Trunk R'y for Chicago and the

as parlor car to Grand Haven.

Chicago express has Pullman sleeper and Buffet car to Detroit daily.

Grand Rapids

BASH RAILROAD.—Passenger station foot of Twelfth St. Try the Wabash Short to Chicago and the West. Standard time.

		Arrive.
t.	Wabash Western Flyer...	* 6:45 p.m.
m.	Chicago Limited...	11:30 p.m.
m.	St. Louis Limited Express.	9:30 a.m.

n.ation.....	
m. Chicago Express.....	\$ 6:15 a.m.
m.	St. Louis and Western Ex-press.....	\$11:30 p.m.

y. *Except Sunday. †Except Monday.

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Continued from first page

prevent their rising at all or come to the surface with them. Sudden cooling to a low temperature prevents this fibrin from coagulating, while a warm or summer temperature and stirring or agitation both favor coagulation. The serum of the milk is loaded with casein, albumen and milk sugar, all of which tend to make it thick and viscous, and the cooler they are the more viscous is the milk, making it the more difficult for the fat globules to rise through it. Yet this does not seem to interfere so much with the rising of the cream as does the coagulation of the small amount of fibrin. Lactic acid dissolves this coagulum, and the Doctor says: "This action of the acid appears to be the cause of the better yield of butter from ripened cream, as the addition of acid to sweet cream before churning will give as much butter as if the cream were ripened in the natural way." This is the best explanation of the philosophy of ripening cream that has been given—and does it not suggest the use of pure lactic acid in preparing cream for the churn, instead of letting it ferment and develop all sorts of bacteria and destructive microbes? The Doctor remarks: "If a method could be devised for removing this cream from shallow pans without mashing with it the skim-milk, a better creaming should result from the use of ice with such vessels than is obtained in any other way, as the fat globules have but a short distance to rise." This is done by drawing off the milk at the bottom.

Points in Butter Making.

A paper read before the Nebraska Dairy-men's Association, by Mr. F. E. Howe, of Fairmont, contains some points worth noting and emphasizing. One is that the cows must be good ones, have plenty of good feed, and warm shelter in winter, or successful results need not be expected. Poor cows entail a failure to begin with, and poor cows and shelter will prevent the best of cows from giving a satisfactory yield.

Another point is to be regular in milking and clean in handling the milk. As the cow is largely a creature of habit, regularity is conducive to a large and steady flow of milk, which will always be of better quality than an irregular flow, for the reason that what causes irregularity will cause a depreciation of quality. As to cleanliness, that is all-important to flavor, which is greatly affected by filth of all kinds. Filth on the milk is insoluble matter, held mechanically, may be; but the most soluble portion goes into the milk to stay, with all its consequences, which are nothing but evil.

Still another point made is to strain your milk as possible after it is drawn from the cow. There are no two opinions about this among intelligent dairymen, although the scientists are not agreed as to the philosophy. One says the temperature has the greater distance to fall, the warmer the milk is set, and this gives the advantage, since fat is a poor conductor of heat and therefore does not cool as fast as the other portions of the milk. This makes it relatively lighter and facilitates its rising. Dr. Babcock says that the lowering of the temperature to 90 degrees or below causes the fibrin in the milk, which he was first to discover, to coagulate, and this entangles the fat globules and prevents their rising. The amount of fibrin, he declares, does not exceed two parts in a thousand and may be less—an amount too small, it would seem, to have an appreciable effect. This, the doctor says, does not coagulate, when suddenly cooled, as in cold setting. But the fact that the cream separates best when the milk is set warm immediately after being drawn from the cow is sufficient for all practical purposes, whatever may be the philosophy of it.

Mr. Howe, like many others, thinks much cream is spoiled by not being properly ripened; but his ideas of ripening do not tally with some of the recent Western notions on the subject, it being insisted that souring is ripening, and lately that exclusion from the air and avoidance of all stirring are necessary. He says: "It will take at least two hours steady stirring on a vat of cream in the summer and twice as long in the winter. The more you stir the cream, the finer the flavor of the butter will be, and clearer from buttermilk." He adds that "nothing but stirring will ever even up and bring out a high, uniform flavor from the 500 different kinds of cream that come into a gathered creamery." This is not in accord with the latest Western teaching, but it may be right, notwithstanding. It looks like ripening cream by oxidizing it, against which theory we have never seen what we consider a valid objection. Opinions based on imperfect experiments and prejudice amount to nothing. The indirect evidences in favor of oxidizing cream are numerous.

But he gives this sensible caution: "When you know your own method and are making a success of it, getting the top of the market, stick to the way you are acquainted with, for if you change part of your system, you will probably have to change the whole." Such change is likely to involve the expense of new apparatus and the cost of throwing away the old. Unless future economy will warrant this, there is no sense in changing from a method that insures success; and when a change is made, it should be attended by strong guarantee of success.

Mr. Howe indulges in another idea which is opposed to the teachings of the Western advocates of the creamery. He declares: "If the farmers, or dairymen, rather, will fix a room that they can keep cool in summer and warm in winter, to keep the milk, cream and butter in—if they will take the same care as the creamery and study their work—they can make just as good or better butter, and get just as good or better prices in the same market." This is philosophically true, and in most cases practically so. The private dairymen can control conditions as no creamery man can; and, without such control, the best results are impossible. Besides, doing the work at home gives employment to members of the family who will perhaps be better paid at this than at any other farm work. They are pretty sure to have to work anyway, and shifting the burden from one shoulder to the other, or from one kind of work to another, is not getting rid of it. Where there is a mortgage so tight, as is too often the case, all must do something to help. There is anything on the farm that pays better than work in the dairy? There is a great deal of gush and

bosh among the zealous advocates of the creamery about its lifting the burdens from the shoulders of the family, but we notice that others are put into their places—and they may be harder to bear.

Milk for Chickens.

It is not every one who is aware that hens are very fond of milk, which is as good for them as it is for pigs. Mix a little cream with skimmed milk, and you have a luxury for chickens. One brought up on a farm, where an open swill-barrel was the order of the day, will remember many and many a hen drowned in it—a pretty good proof that the contents were reliable, or the hens would not have sacrificed their lives in trying to get them. Hens are fond of lopped milk, which is excellent for them; but of course they need other more condensed and solid food in addition. If you have hens—every farmer and dairymen ought to have a few—arrange to give them a supply of skimmed milk. They will take it with the pigs, if they can get at the trough; but this is not the best way to feed them. Give them a trough by themselves, where they will not be molested, nor molest anything else.

Baled Ensilage.

We see announced that an Eastern man has patented a process for baling ensilage and delivering it wherever needed for feeding stock. Why not? It would be a nice thing for the family cow in the city—provided that the ensilage can be so put up that it will not take harm by exposure to the air. It ferments very rapidly and changes color on exposure. This is the evil to be overcome—if the ensilage cannot be delivered daily, like our milk! The soldier the bale, of course the milk! Perhaps some kind of cheap envelop may be devised. This is a new idea, and not to be sneered at in this progressive age.

Veterinary Department

Conducted by Prof. Robert Jennings, Veterinary Surgeon, Professional advice through the columns of the Michigan Farmer to all regular subscribers free. The full name and address will be necessary for any reply to be sent to the editor. No questions answered personally by mail unless accompanied by a fee of \$1.00. Private address, No. 201 First St., Detroit, Mich.

Purse Mucosae.

ANN ARBOR, Sept. 13, 1899.
Veterinary Editor of the Michigan Farmer.
I have a gray mare, Percheron colt, one year old this month, that has a bunch on its stifle joint about as large as one of the large apple; it came on last winter. The mare and colt were running out with other colts in the day time, could not see that it had been kicked. I went to a farrier with it; he said blister it, but I could not see that it did any good. Then he said let it be for a while; then he advised using liniment of iodine. I have used four ounces. It has reduced it but little if any. He thinks it best to let it alone for a while; he thinks it will work it out. I am a little anxious about it as it is a very valuable colt. It is about ten days since I stopped using iodine. The colt was a little lame at first, and I think is a little lame now when he trots. The farrier calls it dropsy of the joint. Respectfully,
W. H. RICE.

Answer.—The swollen stifle in your colt is due to over secretion of the synovial fluid, or joint oil, from injury or constitutional causes. This case is one requiring the assistance of a competent veterinary surgeon. But we fear there is too much alteration of structure for even he to be of much service at this late date.

Bony or Ossific Tumor on the Leg of a Filly.

FOUR TOWNS, Mich., Sept. 23, 1899.
Veterinary Editor of the Michigan Farmer.

As I am a subscriber to the FARMER, I am for veterinary advice. I have a Percheron filly that got kicked on the outside of the front leg, between the knee and ankle joint, three months ago. The leg swelled very badly, and discharged pus for four weeks, then healed over and has left a hard, bony lump about the size of a walnut. Can you prescribe anything that will reduce or remove the bump?

Will you name one or more of the best standard veterinary works, price of same, and where they can be procured?
IRA A. HILLER.

Answer.—It is too late to remove the bony tumor on the leg of your filly. Proper treatment at the start would have prevented its growth. It may be slightly reduced by the following application: Blisters of mercury, one part; vaseline, eight parts; mix well together; then clip off the hair covering the tumor and apply the ointment, rubbing it well in with the fingers; then tie the animal's head so he cannot get his mouth to the part. After the blister has acted well the head may be lowered. Wash the part clean with castile soap and water; when dry apply a little vaseline or lard to the blistered surface. In two or three weeks the application may be repeated if necessary. By this means its growth may be checked.

The following are a few of standard veterinary works, any of which we will send you on receipt of the price: Porcine Anatomy of the Horse, \$8.00; Hypothology, \$3.48; eight volumes: Steel's Bovine Pathology, \$8.00; Strangeway's Veterinary Anatomy, \$8.00; Inson Pharmacology, \$4.00; Hill's Bovine Medicine and Surgery, \$10.00; Fleming's Manual of Veterinary Science, \$9.00; Dunlop's Veterinary Medicine, revised edition, \$5.00; Cheevers's Comparative Anatomy, \$6.00. These are the principal text books used in our veterinary colleges.—VET. ED.

Specific Ophthalmia in a Mare.

DETROIT, Sept. 25, 1899.

I have a ten year old mare which is troubled with an affection of one eye. It runs some, especially after being exposed to cold or wet. Sometimes there is a whitish film comes, after a while passes away. She has been affected that way for about a year. Does not show much during the summer. Had a horse go blind in the same manner a few years ago. What can I do to her.

Answer.—The trouble with your mare appears to be a disease known as specific ophthalmia, periodic in its attack, and always terminating in blindness. Treatment—Use the following wash: Sulphate zinc, acetate of lead, and burnt alum, of each one ounce;

dissolve in one pint of rain water; apply with a clean soft piece of sponge; (do not use a syringe), the animal will wink it into the eye; repeat twice or three times a day. Give no hay or grain for several days. Give the following internally: Sootoline aloes, pulv., two ounces; Jamaica ginger, pulv., one ounce; mix and divide into twelve powders; give one three times a day. Mix to a paste with syrup and smear on the tongue.

Commercial.

DETROIT WHOLESALE MARKET.

DETROIT, September 27, 1899.

WHEAT.—Minnesota brands are higher. No other changes. Quotations on carload lots are as follows:

Michigan roller process	3.90	3.40
Minnesota, old	3.10	3.30
Minnesota, new	3.05	3.25
Minnesota, bakers	3.05	3.25
Minnesota, white	2.95	3.15
Minnesota, red	2.90	3.10
Low grades	2.25	2.50

WHEAT.—Market has ruled more active the past week, and values are higher on both spot and futures. Closing quotations to-day were as follows: No. 1 white, 82c; No. 2 red, 82c; No. 3 red, 73c; rejected red, 61c. Futures closed with No. 2 red for September at 83c, October at 83c, and December at 83c per bu. No. 2 white spot at 73c, and No. 3 at 65c.

CORN.—Market quiet. Quoted at 34c for spot No. 2, 34c for October delivery and 83c for December.

OATS.—Quoted at 23c per bu. for No. 2 white, 23c for No. 2 mixed, 23c for light mixed and 21c for No. 3 white.

BARLEY.—Quoted at 35c 15c per cent. No. 2, 35c; No. 3, 34c; No. 4, 33c; No. 5, 32c; No. 6, 31c; No. 7, 30c; No. 8, 29c; No. 9, 28c; No. 10, 27c; No. 11, 26c; No. 12, 25c; No. 13, 24c; No. 14, 23c; No. 15, 22c; No. 16, 21c; No. 17, 20c; No. 18, 19c; No. 19, 18c; No. 20, 17c; No. 21, 16c; No. 22, 15c; No. 23, 14c; No. 24, 13c; No. 25, 12c; No. 26, 11c; No. 27, 10c; No. 28, 9c; No. 29, 8c; No. 30, 7c; No. 31, 6c; No. 32, 5c; No. 33, 4c; No. 34, 3c; No. 35, 2c; No. 36, 1c; No. 37, 0c; No. 38, 0c; No. 39, 0c; No. 40, 0c; No. 41, 0c; No. 42, 0c; No. 43, 0c; No. 44, 0c; No. 45, 0c; No. 46, 0c; No. 47, 0c; No. 48, 0c; No. 49, 0c; No. 50, 0c; No. 51, 0c; No. 52, 0c; No. 53, 0c; No. 54, 0c; No. 55, 0c; No. 56, 0c; No. 57, 0c; No. 58, 0c; No. 59, 0c; No. 60, 0c; No. 61, 0c; No. 62, 0c; No. 63, 0c; No. 64, 0c; No. 65, 0c; No. 66, 0c; No. 67, 0c; No. 68, 0c; No. 69, 0c; No. 70, 0c; No. 71, 0c; No. 72, 0c; No. 73, 0c; No. 74, 0c; No. 75, 0c; No. 76, 0c; No. 77, 0c; No. 78, 0c; No. 79, 0c; No. 80, 0c; No. 81, 0c; No. 82, 0c; No. 83, 0c; 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No. 625, 0c; No. 626, 0c; No. 627, 0c; No. 628, 0c; No. 629, 0c; No. 630, 0c; No. 631, 0c; No. 632, 0c; No. 633, 0c; No. 634, 0c; No. 635, 0c; No. 636, 0c; No. 637, 0c; No. 638, 0c; No. 639, 0c; No. 640, 0c; No. 641, 0c; No. 642, 0c; No. 643, 0c; No. 644, 0c; No. 645, 0c; No. 646, 0c; No. 647, 0c; No. 648, 0c; No. 649, 0c; No. 650, 0c; No. 651, 0c; No. 652, 0c; No. 653, 0c; No. 654, 0c; No. 655, 0c; No. 656, 0c; No. 657, 0c; No. 658, 0c; No. 659, 0c; No. 660, 0c; No. 661, 0c; No. 662, 0c; No. 663, 0c; No. 664, 0c; No. 665, 0c; No. 666, 0c; No. 667, 0c; No. 668, 0c; No. 669, 0c; No. 670, 0c; No. 671, 0c; No. 672, 0c; No. 673, 0c; No. 674, 0c; No. 675, 0c; No. 676, 0c; No. 677, 0c; No. 678, 0c; No. 679, 0c; No. 680, 0c; No. 681, 0c; No. 682, 0c; No. 683, 0c; No. 684, 0c; No. 685, 0c; No. 686, 0c; No. 687, 0c; No. 688, 0c; No. 689, 0c; No. 690, 0c; No